City of Everett - Buildings 1 and 4

Oct 15, 2013 / LED / DJC

Upgrade v. Replacement

BUILDING 1

	Life Safety	Immediate Occupancy	
	Low	Mid	High
Estimated Upgrade Costs	**7,784,000**	**9,730,000**	**11,680,000**
Estimated Replacement Costs	---	**14,690,000**	**16,160,000**
Upgrade as a % of replacement		**66%**	**72%**

BUILDING 4

	Life Safety	Immediate Occupancy	
	Low	Mid	High
Estimated Upgrade Costs	**3,440,000**	**4,300,000**	**5,160,000**
Estimated Replacement Costs	---	**3,880,000**	**4,270,000**
Upgrade as a % of replacement		**111%**	**121%**

Assumptions:

1. 2014 construction
2. Full move-out and move-in for all scenarios
3. Mid-level finishes
4. Essential facility standards
5. Replacement projects represent + 30 year service life
6. Upgrade projects represent +/- 20 year service life

Building 1 - Preliminary Replacement Estimate

	Quan	Unit	$/unit		Total	Comments
Construction Cost	47,850	sf	$ 210.00	$	10,048,500	Mid-level office cost, essential facility, demo included
Relocation (out and back)	47,850	sf	$ 3.50	$	167,475	
Sales Tax	10	%		$	1,004,850	
Design Fees	8	%		$	803,880	
FF & E	47,850	sf	$ 6.00	$	287,100	Assume some re-use
Other Owner Costs	47,850	sf	$ 10.00	$	478,500	Utilities, permits, consultants
Contingency	7	%		$	703,395	
Lease Temporary Space	47,850	sf	$ 25.00	$	1,196,250	Assume one year
Total Projected Project Costs				**$**	**14,689,950**	**$307.00** per square foot

Building 4 - Preliminary Replacement Estimate

	Quan	Unit	$/unit		Total	Comments
Construction Cost	20,000	sf	$ 100.00	$	2,000,000	Pre-engineered building, CMU wainscot, heavy duty doors, heavy slab, 15% office
Relocation (out and back)	20,000	sf	$ 5.00	$	100,000	
Sales Tax	9	%		$	180,000	
Design Fees	10	%		$	200,000	
FF & E	20,000	sf	$ 10.00	$	200,000	Assume new equip
Other Owner Costs	20,000	sf	$ 20.00	$	400,000	Utilities, permits, consultants
Contingency	10	%		$	300,000	
Lease Temporary Space	20,000	sf	$ 25.00	$	500,000	Assume one year
Total Projected Project Costs				**$**	**3,880,000**	**$194.00** per square foot

City of Everett - Buildings 1 and 4

Preliminary Scope and Cost Estimate for Seismic Upgrade
Oct 15, 2013 / LED / DJC

BUILDING 1

Performance Criteria
Performance criteria for this phase of assessment is ASCE 31-03 "Immediate Occupancy" (IO)

DESCRIPTION
Concrete tilt-up building originally constructed in 1971; 355 ft x 100 ft in plan, steel roof trusses supported by interior steel columns and perimeter concrete columns; 14 gauge corrugated steel roof deck; partial second floor at southern office spaces; north warehouse space with slender walls

ITEM		DESCRIPTION	QUANTITY	UNIT	UNIT $ (INSTALLED)		TOTAL $
A. EXTERIOR TILT-UP WALLS							
1		**Repair of distress to exterior concrete tilt-up shearwalls**					
	1.1	Spall repair, from exterior	1	ea	$10,000	$	10,000
	1.2	Inject cracks > 1/16" with epoxy under pressure from exterior	1,000	lf	$75	$	75,000
2		**Strengthen tilt-up walls at warehouse out-of-plane**					
	2.1	Install W6x20 full-height strong backs at interior of all tilt-up walls at warehouse, attach Attach to walls with 1/2 x 4" epoxy-grouted threaded rod at 1'-6" o.c., stagger at web Assume (3) per wall; coordinate with openings and utilities	1,400	lf	$150	$	210,000
3		**Protect exterior shearwalls from future water intrusion**					
	3.1	Option 1 - New Rainscreen System Includes R+R 100% windows, installation of flashings, etc.	22,750	sf	$50	$	1,137,500
		→ **Sub-total, A: Exterior Tilt-up Walls =**				**$**	**1,432,500**
B. ROOF							
Reference roof plan S1.2							
4		**New roof decking at grids A (west side) and F (east side)**					
	4.1	Remove and replace 2' wide deck edge strip per roof plan S-1.2	900	sf	$12	$	10,800
5		**Strengthen existing roof diaphragm**					
	5.1	Strengthen existing roof deck at supports, seams and edges per note 2 on S-1.2	35,500	sf	$5	$	177,500
6		**Roof-to-wall anchorage**					
	6.1	Anchor interior CMU / tilt-up walls to roof per sketch A on S-1.3	300	lf	$700	$	210,000
	6.2	Anchor north and south elevation tilt-up walls to roof per sketch B on S-1.3	200	lf	$700	$	140,000
	6.3	Anchor east and west elevation tilt-up walls to roof per sketch C on S-1.3	430	lf	$400	$	172,000
	6.4	Anchor west elevation tilt-up walls to roof at overhang per sketches D and E on S1.4	280	lf	$400	$	91,000

7		**New roofing system**					
	7.1	Install new 2-ply SBS system in hot asphalt with demo and insulation	35,500	sf	$15	$	532,500
		→ **Sub-total, B: Roof =**				**$**	**1,333,800**
C. EXTERIOR CAST-IN-PLACE COLUMNS							
8		**Strengthen 100% perimeter cast-in-place columns**					
		Reference plan on S-1.2 and detail F on S-1.4					
	8.1	Encase each column per detail; form and pour from exterior side	80	cu yd	$3,000	$	240,000
		* note: this addresses column strength, shearwall boundaries, column anchorage and also out of plane wall anchorage at the base					
		→ **Sub-total, C: Lateral Support, Transverse Direction =**				**$**	**240,000**
D. NON-STRUCTURAL							
9		**Interior Finishes**					
	9.1	Patch and paint GWB	35,500	sf	$8	$	284,000
	9.2	Repair ceiling grid, replace tile	35,500	sf	$2	$	71,000
	9.3	Replace carpet	35,500	sf	$3	$	106,500
	9.4	Specialties	35,500	sf	$2	$	71,000
10		**Mechanical Upgrades**					
	10.1	New zoning, duct work, diffusers					
	10.2	HVAC					
	10.3	Warehouse ventilation					
	10.4	Controls, design, commissioning	subconsultant estimate			$	450,000
11		**Electrical Upgrades**					
	11.1	Switch board + new vault					
	11.2	Transfer switch					
	11.3	Emergency feeder					
	11.4	Generator	subconsultant estimate			$	350,000
11		**Misc - allowance**				$	100,000
		→ **Sub-total, D: Non-Structural**				**$**	**1,432,500**

			Subtotal	=	**$**	**4,438,800**
			General Conditions	10%	$	443,880
			Profit	10%	$	443,880
			Total Estimated Construction Cost	=	**$**	**5,326,560**
X. SOFT COSTS						
x.1	Relocation (out and back)		47,850 sf	$5	$	239,250
x.2	Sales tax		10 %		$	532,656
x.3	Design fees		10 %		$	532,656
x.4	FF & E	assume most re-used	47,850 sf	$4	$	191,400
x.5	Other owner costs	utilities, permits, consultants	47,850 sf	$20	$	957,000
x.6	Contingency	higher risk - use 15%	15 %		$	798,984
x.7	Temporary relocation	assume $24/sf for one year	47,850 sf	$24	$	1,148,400
			Total Estimated Soft Cost	=	**$**	**4,400,346**
			TOTAL ESTIMATED PROJECT COSTS FOR UPGRADE OF BUILDING 1	=		**$ 9,726,906**

City of Everett - Buildings 1 and 4

Preliminary Scope and Cost Estimate for Seismic Upgrade
Oct 15, 2013 / LED / DJC

BUILDING 4

Performance Criteria
Performance criteria for this phase of assessment is ASCE 31-03 "Immediate Occupancy" (IO)

DESCRIPTION
Prefabricated steel building originally constructed in 1985; transverse pre-engineered bolted frames in the east-west direction; north end tilt-up wall to match Bldg 1;
Limited tension-only bracing at middle bay of roof and at some transverse frame lines; very little if any lateral force resisting elements along exterior east and west walls

ITEM		DESCRIPTION	QUANTITY	UNIT	UNIT $ (INSTALLED)	TOTAL $
A. EXTERIOR WALLS						
1		**Construct new cast-in-place concrete shearwall at south elevation**				
	1.1	Construct 8" reinforced concrete wall with exposed aggregate finish to match bldg 1 (restores torsional regularity to building)	42	cu yd	$3,000	$126,000
	1.2	Extend existing strip footing full length - assume additional 2' x 1.5' deep x 70 ft, dowelled to existing	8	cu yd	$3,000	$24,000
	1.3	Earthwork; exterior patch exterior pavement, allowance	1	ea		$10,000
	1.4	Attachment to new roof diaphragm per sketch J on S-4.1	70	lf	$250	$17,500
2		**Construct new cast-in-place concrete shearwalls at east and west elevations**				
	2.1	Assume 8" reinforced concrete walls x 100 ft in length	62	cu yd	$3,000	$186,000
	2.2	Extend existing strip footings under new shearwalls	20	cu yd	$3,000	$60,000
	2.3	Earthwork; exterior patch exterior pavement, allowance	1	ea		$15,000
	2.4	Attachment to new roof diaphragm	100	lf	$250	$25,000
3		**Protect all exterior concrete shearwalls from future water intrusion**				
	3.1	Coat existing walls with Tnemec coating system Includes flashings, terminations, etc	6000	sf	$22	$132,000
		→ **Sub-total, A: Exterior Tilt-up Walls =**				**$595,500**
B. ROOF						
Reference plan S-4.1						
4		**Remove 100% existing metal roof**				
	4.1	Remove and dispose of existing 26 gauge standing seam roof	15000	sf	$2	$30,000
	4.2	Remove and dispose of 100% batt insulation	15000	sf	$0.75	$11,250

5		**Install new roof diaphragm**				
	5.1	Install 18 gauge Verco B steel deck	15000	sf	$6	$90,000
	5.2	Misc connections to existing structure and new shearwalls - allowance	1	ea		$30,000
6		**Install new roofing system**				
	6.1	Assume architectural metal (includes flashings, rigid insulation)	15000	sf	$8	$120,000
		→ **Sub-total, B: Roof =**				**$281,250**

C. TRANSVERSE LATERAL SYSTEM

7		**Modify (6) existing pre-engineered frames**				
	7.1	Infill existing frames with wood shear walls	8400	sf	$15	$126,000
	7.2	Extend existing thickened slab - assume additional 2' x 1.5' deep x 70', dowelled to existing ea swall	62	cu yd	$3,000	$186,000
	7.3	Earthwork; patch interior slab-on-grade, allowance	1	ea		$10,000
		→ **Sub-total, C: Transverse Lateral System =**				**$322,000**

D. EXISTING INTERIOR SHEARWALL UPGRADE

8		**Convert existing GWB shear walls to plywood shear walls**				
	8.1	Install new anchor bolts at first level walls	200	ea	$50	$10,000
	8.2	Thru-floor connectivity, allowance	1	ea		$25,000
	8.3	Strapping, holdowns, allowance	1	ea		$25,000
	8.4	Install new blocking and plywood sheathing	1	ea		$25,000
9		**Retrofit existing plywood shearwall anchorage**				
	9.1	Remove bottom 2' of plywood sheathing	1	ea		$10,000
	9.2	Install new anchor bolts at first level walls	100	ea	$50	$5,000
	9.3	Block and patch with new plywood sheathing	1	ea		$15,000
		→ **Sub-total, D: Upgrade Interior Shearwalls =**				**$115,000**

E. NON-STRUCTURAL

10		**Interior Finishes**				
	10.1	Patch and paint GWB	15,000	sf	$2	$30,000
	10.2	Patch and repair floor	15,000	sf	$2	$30,000
	10.3	Paint throughout	15,000	sf	$3	$45,000
	10.4	Specialties	15,000	sf	$2	$30,000
11		**Mechanical**				
	11.1	Second floor office - economizers				
	11.2	Shop ventilation				
	11.3	HVAC				
	11.4	Controls, design, commissioning	subconsultant estimate			$350,000

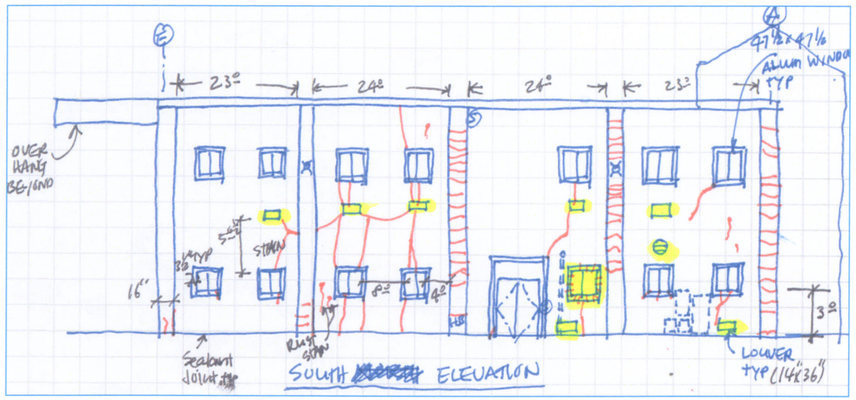
12		**Electrical**					
	12.1	New generator and pad					
	12.2	Exterior transfer switch					
	12.3	Terminate emergency feeder					
	12.4	Water coolant restraints	subconsultant estimate				$200,000
13		**Misc - allowance**					$100,000
			→ **Sub-total, E: Non-Structural**				**$785,000**

Subtotal	=		**$2,098,750**
General Conditions	10%	$	209,875
Profit	10%	$	209,875
Total Estimated Construction Cost	=	**$**	**2,518,500**

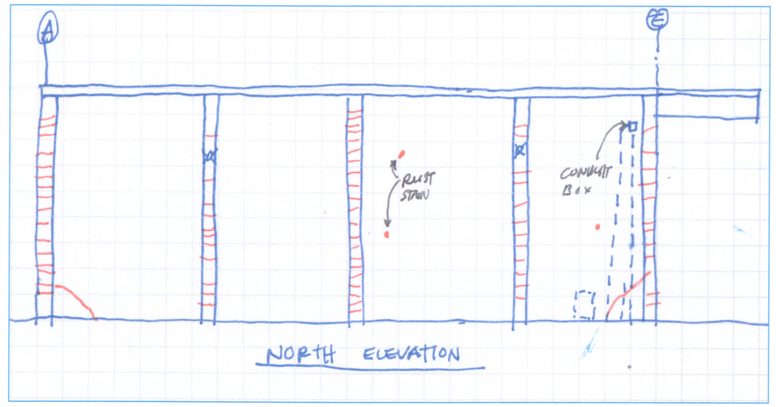
X. SOFT COSTS

x.1	Relocation (out and back)		20,000	sf	$5	$	100,000
x.2	Sales tax		10	%		$	251,850
x.3	Design fees		10	%		$	251,850
x.4	FF & E	assume most re-used	20,000	sf	$10	$	200,000
x.5	Other owner costs	utilities, permits, consultants	20,000	sf	$10	$	200,000
x.6	Contingency	higher risk - use 15%	15	%		$	377,775
x.7	Temporary relocation	assume $20/sf for one year	20,000	sf	$20	$	400,000
			Total Estimated Soft Cost		=	**$**	**1,781,475**

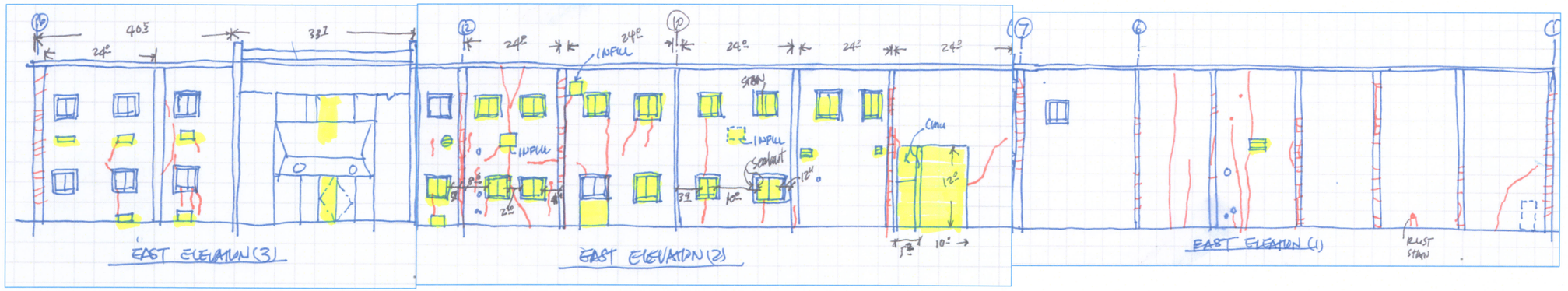
TOTAL ESTIMATED PROJECT COSTS FOR UPGRADE OF BUILDING 4 = $ 4,299,975



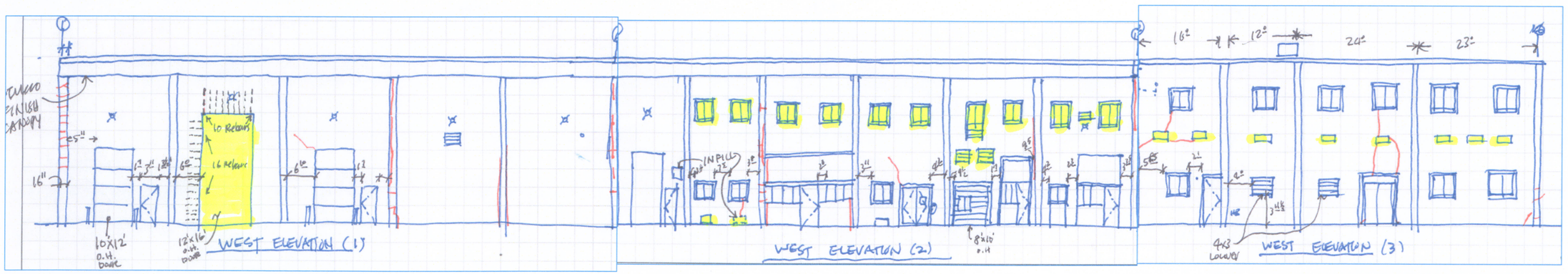
1 SOUTH ELEVATION SURVEY
SCALE: NTS



2 NORTH ELEVATION SURVEY
SCALE: NTS



3 EAST ELEVATION SURVEY
SCALE: NTS



4 WEST ELEVATION SURVEY
SCALE: NTS

KEY LEGEND

OPENINGS ADDED AFTER ORIGINAL CONSTRUCTION

SIGNIFICANT CRACK DOCUMENTED BY OAC ON 9-10-2013

S-1.1

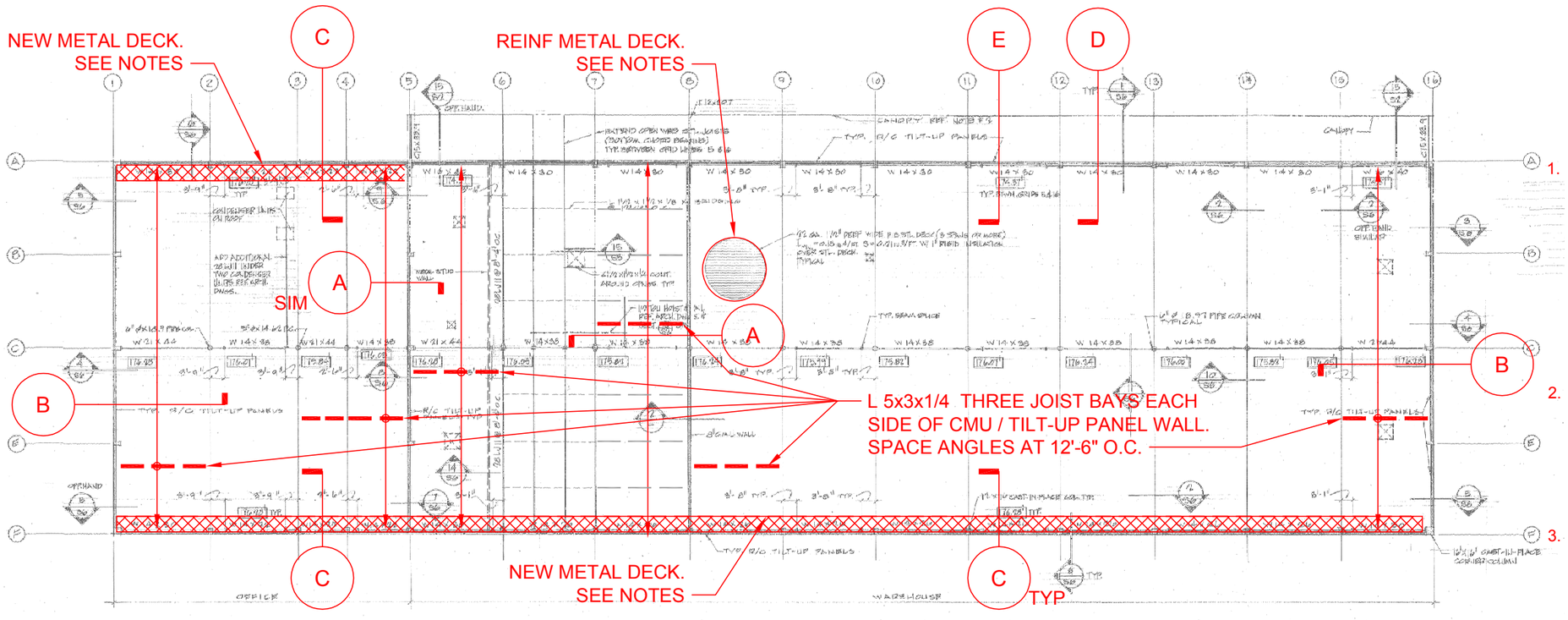
NOT FOR CONSTRUCTION

CITY OF EVERETT - BUILDING 1

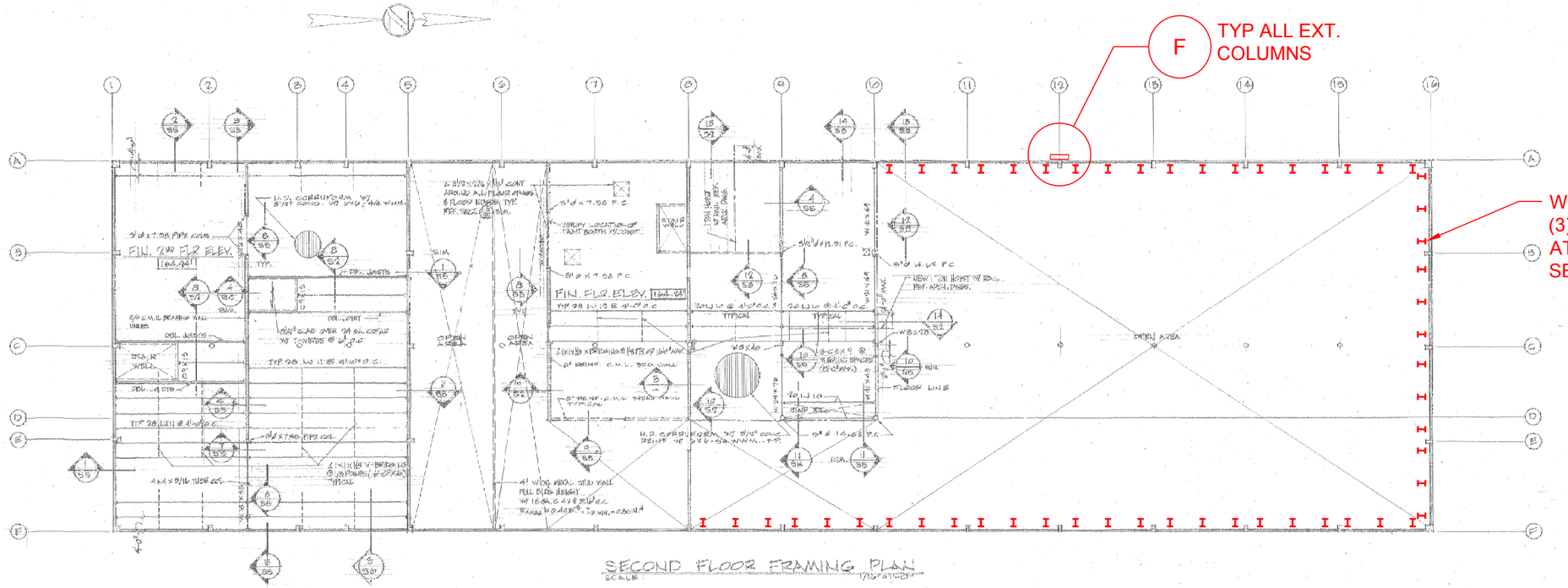
PRELIMINARY SEISMIC ASSESSEMENT - EXTERIOR WALLS SURVEY
3200 CEDAR STREET, EVERETT, WA
SCALE : NTS

DATE	2013-10-7
DRAWN	PK
CHECK	LED
JOB	2013118

OAC
701 Dexter Avenue North
Suite 301
Seattle, WA 98109-4342
t: 206.285.4300
f: 206.285.4371
w: www.oacsvcs.com



ROOF FRAMING PLAN
SCALE: 1/16"=1'-0"



SECOND FLOOR FRAMING PLAN
SCALE: 1/16"=1'-0"

NOTES:

1. REMOVE (E) STEEL ROOF DECK ALONG EAST AND WEST ELEVATION OF THE ROOF TO FIRST SEAM AS INDICATED. REPLACE WITH SIMILAR DEPTH 16 GA. GALVANIZED METAL DECK. PROVIDE 7 WELD PATTERN AT SUPPORTS, 1 1/2" TOP SEAM WELD @ 12" O.C. AT SIDELAP AND 1/2" Ø PUDDLE WELDS AT 6" O.C. AT SUPPORTS PARALLEL TO FLUTES.
2. REINFORCE (E) STEEL ROOF DECK TO RECEIVE MIN. 7 - 1/2" Ø PUDDLE WELDS AT SUPPORTS, 1 1/2" SEAM WELD @ 12" O.C. AT SIDELAP AND 1/2" Ø PUDDLE WELDS AT 6" O.C. AT SUPPORTS PARALLEL TO FLUTES.
3. INSTALL STRONG BACKS AT WAREHOUSE WALLS. COORDINATE WITH WALL OPENINGS.

S-1.2

NOT FOR CONSTRUCTION

CITY OF EVERETT - BUILDING 1

PRELIMINARY SEISMIC ASSESSMENT - STRUCTURAL PLANS

3200 CEDAR STREET, EVERETT, WA

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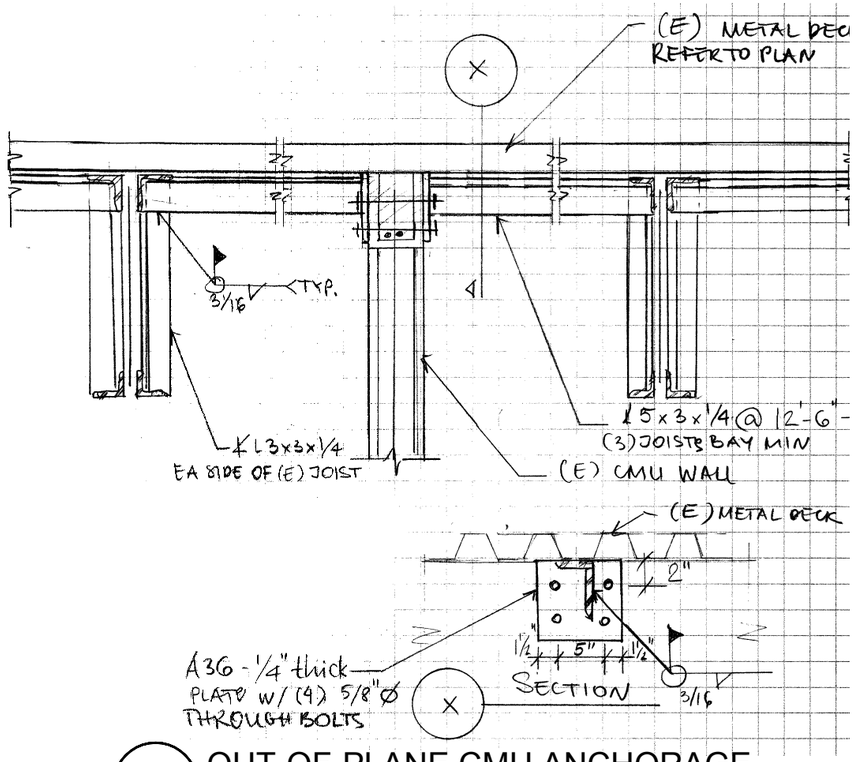
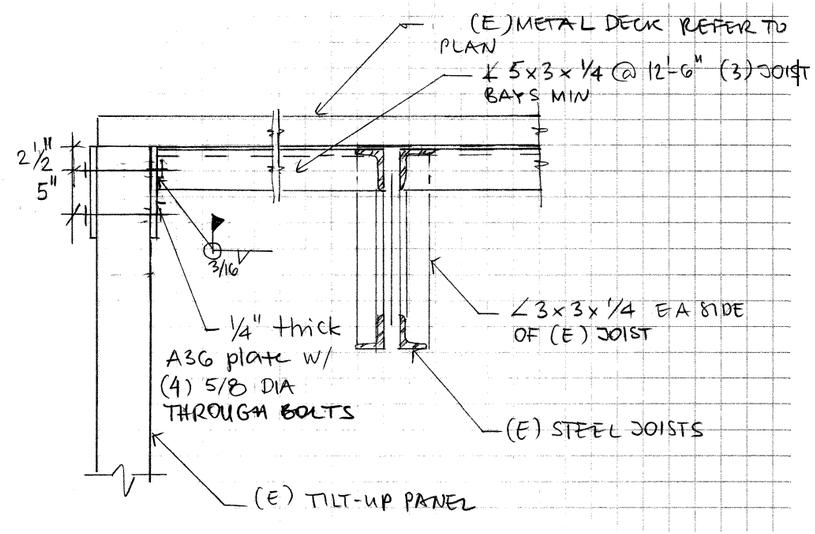
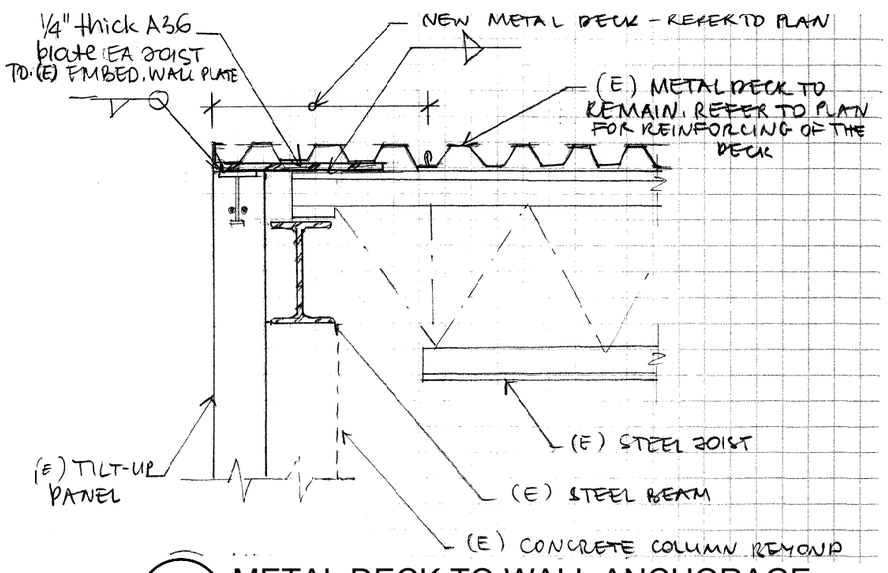


A OUT-OF-PLANE CMU ANCHORAGE



B OUT-OF-PLANE WALL ANCHORAGE



C METAL DECK TO WALL ANCHORAGE

S-1.3

NOT FOR CONSTRUCTION

CITY OF EVERETT - BUILDING 1

PRELIMINARY SEISMIC ASSESSMENT - STRUCTURAL DETAILS

3200 CEDAR STREET, EVERETT, WA

SCALE: NTS

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D SHEAR PANEL @ GRID Ⓕ

E OUT OF PLANE WALL ANCHORAGE

F SECTION AT FOOTING, TYP
NTS

S-1.4

NOT FOR CONSTRUCTION

CITY OF EVERETT - BUILDING 1

PRELIMINARY SEISMIC ASSESSMENT - STRUCTURAL DETAILS

3200 CEDAR STREET, EVERETT, WA

SCALE : NTS

DATE	2013-10-7
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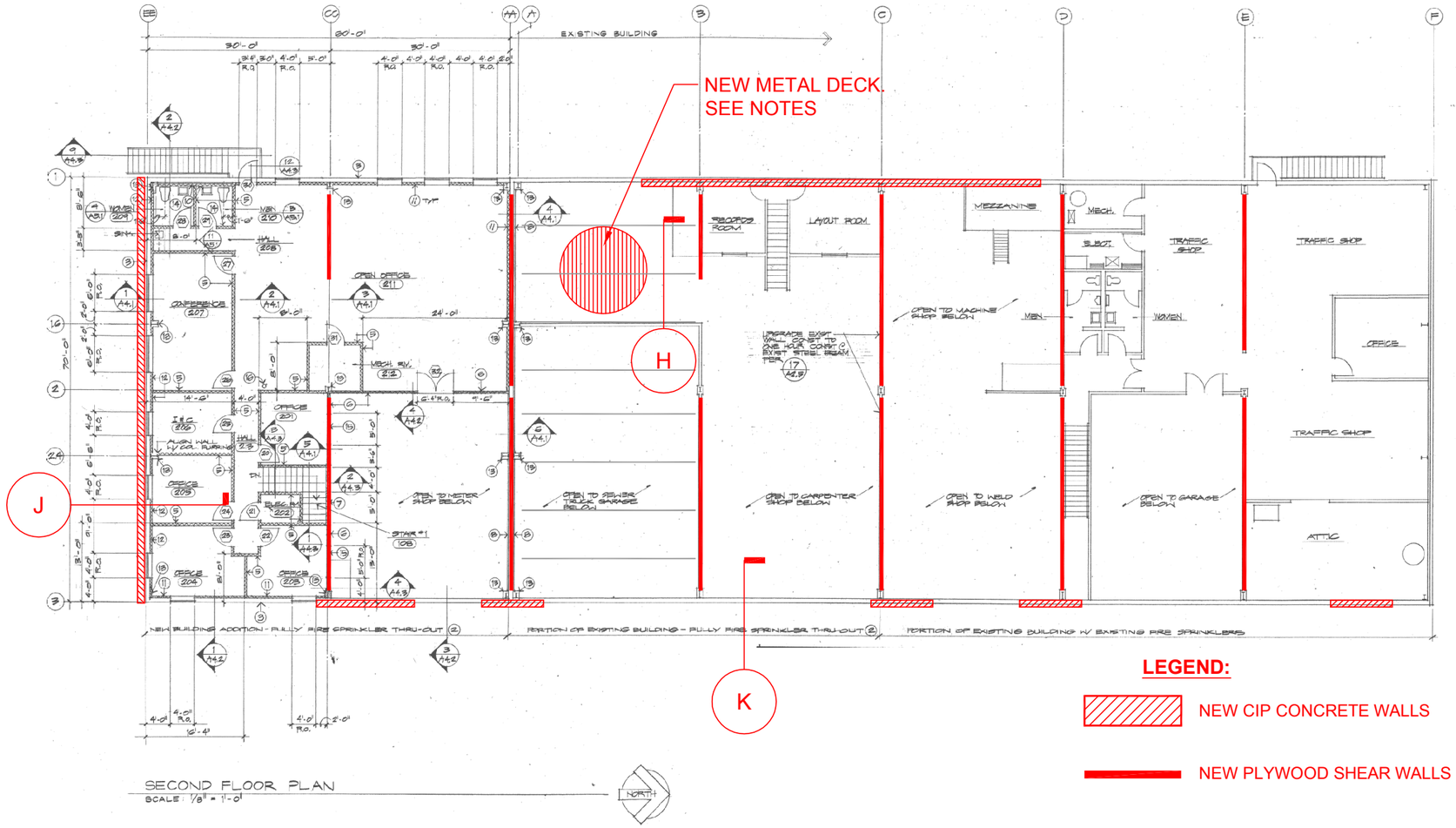

SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"

NORTH

NOTES:

1. REMOVE (E) METAL DECK AND REPLACE WITH 1 1/2" DEEP 18 GA. METAL DECK (3 DECK SPAN). PROVIDE MIN 7 HILTI FASTENER PATTERN AT SUPPORTS AND SIDE LAP WITH PUNCHLOCK TOOL W/ FASTENERS @ 12" O.C.. FASTENER SPACING SHALL NOT BE LESS THAN 8" O.C. AT SUPPORTS PARALLEL TO FLUTES. DECK PROPERTIES TO BE S + 0.322 IN³ AND I = 0.302 IN4 PER FOOT OF WIDTH.
2. AT ALL (E) INTERIOR SHEARWALL LOCATIONS: REPLACE GWB SHEATHING WITH PLYWOOD SHEATHING - PROVIDE 5/8" Ø A.B. @ 24" O.C. MINIMUM AT SILL PLATE ATTACHEMENT TO FOOTING.

LEGEND:

NEW CIP CONCRETE WALLS

NEW PLYWOOD SHEAR WALLS

S-4.1

NOT FOR CONSTRUCTION

CITY OF EVERETT - BUILDING 4

PRELIMINARY SEISMIC ASSESSMENT - ROOF PLAN

3200 CEDAR STREET, EVERETT, WA

SCALE: NTS

DATE	2013-10-7
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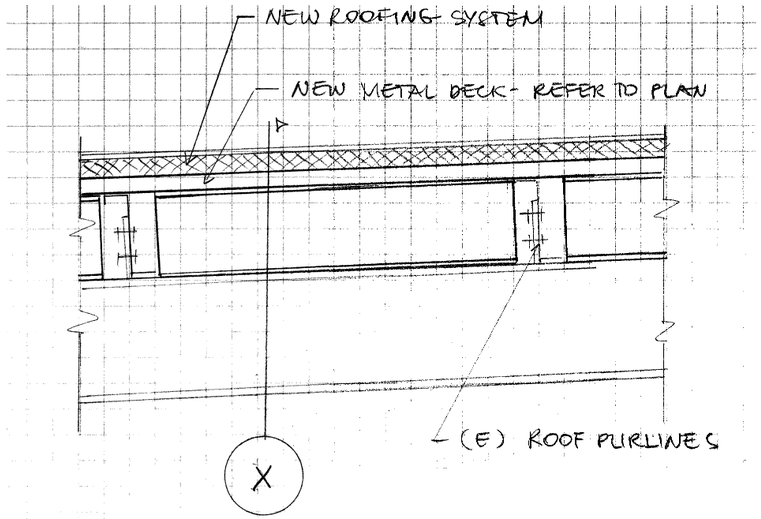

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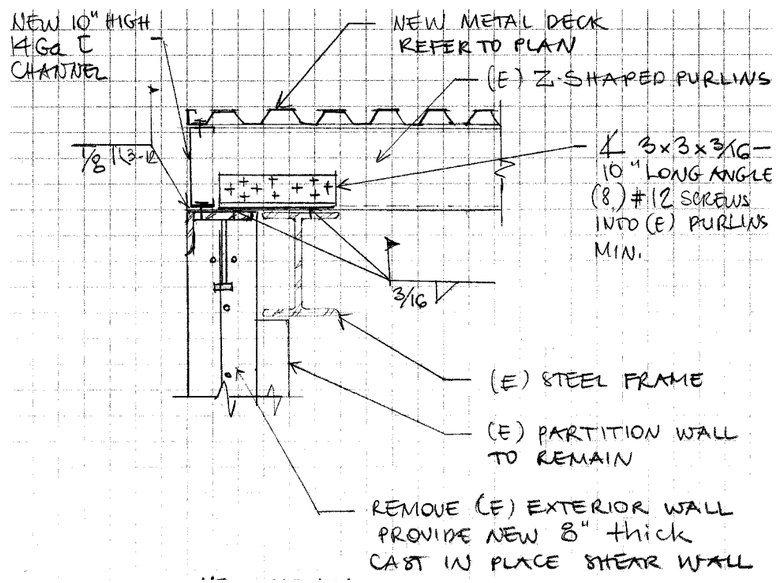

J ROOF ANCHORAGE AT NEW CIP WALL

S-4.2

NOT FOR CONSTRUCTION

CITY OF EVERETT - BUILDING 4

PRELIMINARY SEISMIC ASSESSMENT - STRUCTURAL DETAILS

3200 CEDAR STREET, EVERETT, WA

SCALE : NTS

DATE	2013-10-7
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